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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/064,681	08/06/2002	Mark E. Addis	EH-10712	7220

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EXAMINER

RODGERS, MATTHEW E

ART UNIT	PAPER NUMBER
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3677

DATE MAILED: 05/21/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/064,681

Applicant(s)

ADDIS, MARK E.

Examiner

Matthew E. Rodgers

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 August 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) 18-25 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☒ Interview Summary (PTO-413) Paper No(s). 2.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-17, drawn to a brush seal and an apparatus, classified in class 277, subclass 355.
- II. Claims 18-25, drawn to a method of cooling a brush seal, classified in class 277, subclass 355.

The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case the process for using the product as claimed can be practiced with another materially different product for at least the reason that claim 18 does not require a body (as in claim 1) nor does it require the brush seal to be mounted to the first component (as in claim 9).

Because these inventions are distinct for the reasons given above and the search required for Group II is not required for Group I, restriction for examination purposes as indicated is proper.

During a telephone conversation with Brian Hamilla on 5/15/03 a provisional election was made with traverse to prosecute the invention of Group I, claims 1-17. Affirmation of this

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election must be made by applicant in replying to this Office action. Claims 18-25 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Claim Objections

Claims 5 and 6 are objected to because of the following informalities: the limitation in claim 5 "said passageway comprises a plurality of passageways" is unclear since a single passageway cannot also be a plurality of passageways (Examiner suggests changing the language of claim 5 to read --The brush seal of claim 1 further comprising a plurality of passageways--); the limitation in line 3 of claim 6 "said second end of said passageway" does not specify to which passageway is being referred, i.e. the first claimed passageway or the passageway in the first component. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-10 and 15-17 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,533,284 to Aksit et al (hereinafter "Aksit"). Aksit shows a brush seal that restricts fluid flow through a gap between a first component (32) and a second component (352) having a

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body (336), a brush pack (340) secured to the body and mounted on the first component (32), and a passageway (346) through the body. The passageway (346) has a first end exposed to the gap and a second end not exposed to the gap. The body has a side plate (336) and a backing plate (338) where the passageway extends through the side plate. The side plate includes a windage cover through which the passageway extends. The first end of the passageway is adjacent the brush pack. The seal has a plurality of passageways (col. 4, lines 22-37) circumferentially spaced. The first component (32) has a secondary passageway (348) or opening therethrough in communication with the second end of the passageway for discharging a cooling flow. The first component (32) is a stationary component of a gas turbine engine. It is understood that the temperature of the cooling flow is lower than the fluid flow.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aksit in view of U.S. Patent No. 6,364,316 to Arora (hereinafter "Arora"). Aksit shows all the limitations of claims 9 and 10, from which claims 11 and 12 depend, as stated above. However, Aksit does not explicitly discuss that a compressor supplies the cooling flow to the opening.

Arora teaches that it is old and well known in the art to use the compressed air of a compressor of a turbine engine to "cool individual components" (col. 1, lines 23-42).

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Therefore, it would have been obvious to one with ordinary skill in the art at the time the invention was made to use the compressor to provide the cooling flow to the brush seal for the purpose of maximizing the efficiency of the engine by fully utilizing bypass air from the primary engine flow path to regulate the temperature of other turbine engine components as taught by Arora.

Claims 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aksit in view of U.S. Patent No. 6,343,792 to Shinohara et al (hereinafter "Shinohara"). Aksit shows all the limitations of claim 9, from which claims 13 and 14 depend, as stated above. However, Aksit does not show that a rotating component includes an opening for discharging a cooling flow.

Shinohara teaches that it is old and well known in the art to provide an opening (520c) in the rotating component of a seal for the purpose of using the rotational motion of the shaft to effectively pump air onto the leaves (18) of a stationary leaf seal (10).

Therefore, it would have been obvious to one with ordinary skill in the art at the time the invention was made to make the seal of Aksit with a fluid delivery system as taught by Shinohara for the purpose of using the rotational motion of the shaft to effectively pump air onto the bristles of the brush seal (340) of Aksit.

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Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew E. Rodgers whose telephone number is (703) 306-3406. The examiner can normally be reached on regular work hours.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, J. J. Swann can be reached on (703) 306-4115. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9326 for regular communications and (703) 872-9327 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-2168.



MR
May 16, 2003



ROBERT J. SANDY
PRIMARY EXAMINER